

IN THE CLAIMS:

Please amend the claims as follows:

Claims 1-3 (Cancelled)

4. (Currently Amended) A method for purifying used motor oil, comprising:
mixing the used motor oil with a phase transfer catalyst in the presence of a base compound, wherein the phase transfer catalyst comprises a glycol;
mixing the used motor oil with a solvent to dissolve contaminants from the used motor oil into the solvent; and then
separating the solvent from the used motor oil.
5. (Cancelled)
6. (Previously Presented) The method of claim 4, wherein the phase transfer catalyst comprises ethylene glycol.
7. (Currently Amended) The method of claim 4, further comprising removing contaminants from the used motor oil by distilling the used motor oil at a temperature of about 200°C to about 275°C and a pressure of about 100 torr to about 200 torr.
8. (Currently Amended) The method of claim 4, further comprising removing contaminants from the used motor oil by distilling the used motor oil at a temperature of about 275°C to about 300°C and a pressure of about 0.05 torr to about 0.2 torr.
9. (Currently Amended) The method of claim 4, further comprising removing contaminants from the used motor oil by distilling the used motor oil at a temperature of about 200°C to about 300°C and a pressure of about 0.05 torr to about 200 torr.

11. (Previously Presented) The method of claim 4, wherein the base compound is an inorganic or organic base compound.

12. (Previously Presented) The method of claim 11, wherein the inorganic base compound is selected from the group consisting of sodium hydroxide, potassium hydroxide, and combinations thereof.

13. (Currently Amended) The method of claim 4, wherein a mixture of the used motor oil and phase transfer catalyst comprises about 1 % to about 10 % by weight of the phase transfer catalyst.

14. (Cancelled)

15. (Previously Presented) The method of claim 4, further comprising separating the contaminants from the solvent.

16. (Previously Presented) The method of claim 15, further comprising recycling the solvent.

18. (Currently Amended) The method of claim 4, wherein separating the solvent from the used motor oil comprises extraction.

19. (Currently Amended) The method of claim 4, wherein separating the solvent from the used motor oil comprises flowing the solvent counter to the used motor oil within means for extraction.

20. (Previously Presented) The method of claim 19, wherein means for extraction comprises a mixer, agitated column, non-agitated column, and Karr column.

21. (Previously Presented) The method of claim 4, wherein the solvent comprises N,N-dimethylformamide.

22. (Previously Presented) The method of claim 4, wherein the solvent is a polar organic compound.

23. (Currently Amended) A method for removing contaminants from a used petroleum distillate, comprising:

mixing the used petroleum distillate with ethylene glycol in the presence of a base compound;

mixing the used petroleum distillate with a solvent to dissolve contaminants from the used petroleum distillate motor oil into the solvent; and then

separating the solvent from the used petroleum distillate.

24. (Currently Amended) The method of claim 23, wherein the used petroleum distillate comprises motor oil.

25. (Currently Amended) The method of claim 23, wherein separating the solvent from the used petroleum distillate comprises distilling the used petroleum distillate at a temperature of about 200°C to about 275°C and a pressure of about 100 torr to about 200 torr.

26. (Currently Amended) The method of claim 23, wherein separating the solvent from the used petroleum distillate comprises distilling the used petroleum distillate at a temperature of about 275°C to about 300°C and a pressure of about 0.05 torr to about 0.2 torr.

27. (Currently Amended) The method of claim 23, wherein separating the solvent from the used petroleum distillate comprises distilling the used petroleum distillate at a temperature of about 200°C to about 300°C and a pressure of about 0.05 torr to about 200 torr.

28. (Currently Amended) The method of claim 23, wherein a mixture of the used petroleum distillate and ethylene glycol comprises about 1 % to about 10 % by weight of ethylene glycol.

29. (Cancelled)

30. (Previously Presented) The method of claim 23, further comprising separating the contaminants from the solvent.

31. (Previously Presented) The method of claim 30, further comprising recycling the solvent.

33. (Previously Presented) The method of claim 23, wherein separating the solvent from the petroleum distillate comprises extraction.

34. (Currently Amended) The method of claim 23, wherein separating the solvent from the used petroleum distillate comprises flowing the solvent counter to the used petroleum distillate within means for extraction.

35. (Previously Presented) The method of claim 34, wherein means for extraction comprises a mixer, agitated column, non-agitated column, and Karr column.

36. (Previously Presented) The method of claim 23, wherein the solvent comprises N,N-dimethylformamide.

37. (Previously Presented) The method of claim 23, wherein the solvent is a polar organic compound.

38. (Currently Amended) A method for removing contaminants from used motor oil, comprising:

mixing the used motor oil with ethylene glycol in the presence of an inorganic base compound;

mixing the used motor oil with a solvent to dissolve contaminants from the used motor oil into the solvent;

separating the solvent from the used motor oil; and then
separating the contaminants from the solvent.

40. (Previously Presented) The method of claim 38, wherein the inorganic base compound is selected from the group consisting of sodium hydroxide, potassium hydroxide, and combinations thereof.

41. (Currently Amended) The method of claim 38, wherein a mixture of the used motor oil and ethylene glycol comprises about 1 % to about 10 % by weight of the ethylene glycol.

42. (Cancelled)

43. (Previously Presented) The method of claim 38, further comprising recycling the solvent.

45. (Currently Amended) The method of claim 38, wherein separating the solvent from the used motor oil comprises extraction.

46. (Currently Amended) The method of claim 38, wherein separating the solvent from the used motor oil comprises flowing the solvent counter to the used motor oil within means for extraction.

47. (Previously Presented) The method of claim 46, wherein the means for extraction comprises a mixer, agitated column, non-agitated column, and Karr column.

48. (Previously Presented) The method of claim 38, wherein the solvent comprises N,N-dimethylformamide.

49. (Previously Presented) The method of claim 38, wherein the solvent is a polar organic compound.

50. (Currently Amended) A method for removing contaminants from used motor oil, comprising:

mixing the used motor oil with a glycol in the presence of an inorganic base compound;

mixing the used motor oil with N,N-dimethylformamide to dissolve contaminants from the used motor oil into the solvent;

separating the N,N-dimethylformamide from the used motor oil; and then separating the contaminants from the solvent.

51. (Previously Presented) The method of claim 50, wherein the inorganic base compound is selected from the group consisting of sodium hydroxide, potassium hydroxide, and combinations thereof.

52. (Cancelled)

53. (Previously Presented) The method of claim 50, wherein the glycol comprises ethylene glycol.

54. (Previously Presented) The method of claim 4, wherein a concentration of the base compound in the used oil is between 0.5 and 5 weight percent on a dry weight basis.

55. (Currently Amended) The method of claim 23, wherein a concentration of the base compound in the used petroleum distillate is between 0.5 and 5 weight percent on a dry weight basis.

56. (Currently Amended) The method of claim 38, wherein a concentration of the base compound in the used motor oil is between 0.5 and 5 weight percent on a dry weight basis.